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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,751	07/28/2003	Ramarathnam Venkatesan	MS1-422USC1	4862
22801	7590	12/21/2006		
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			EXAMINER DO, ANH HONG	
			ART UNIT	PAPER NUMBER
			-2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	12/21/2006	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 12/21/2006.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lhptoms@leehayes.com

**Office Action Summary**

Application No.

10/628,751

Applicant(s)

VENKATESAN ET AL.

Examiner

ANH H. DO

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/30/06 and 10/13/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 10/13/2006 have been fully considered but they are not persuasive.

#### **35 U.S.C. 101:**

In order for the claimed invention to accomplish a practical application, it must produce a "useful, concrete and tangible result" *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-1602 (see MPEP 2106.II.A). A practical application can be achieved through recitation of "a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan", or "limited to a practical application within the technological arts" (MPEP 2106 IVB2(b)). Currently, claims 1-7 and 12-15 meet neither of these criteria. The **"single hash value"** is not a "useful, concrete and tangible result." Furthermore, the claimed method is not achieved through recitation of **"a physical transformation outside the computer"** for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan", or **"limited to a practical application within the technological arts."** In Remarks (pages 9-12), the Applicant cites AT&T invention to attempt to prove that the claimed subject matter has a specifically described useful, concrete and tangible result and application. However, the PIC indicator recited in the AT&T invention is not compatible to the "hash value" derived in the claimed method. Thus, claims 1-7 and 12-15 do not comply with the patentability requirements of 35 U.S.C. 101.

**35 U.S.C. 102:**

Schwarz, in col. 6, lines 9-11, states: "Unchanged lines again must have identical hash values in both the current and previous images and must match exactly." This describes identical hash value for both current and previous images, and the images are different from each other (see col. 4, lines 43-48: current image 43 and previous image 40 are different). The phrase "must match exactly" does not refer to the images but the unchanged lines. Thus, Schwarz fully discloses the subject matters recited in independent claims 1, 6, 8, and 12.

**35 U.S.C. 103:**

As discussed above, Schwarz fully discloses "deriving a hash value... in identical hash values." And Chang teaches that RIME uses the hash value to produce a watermarked image (page 58, paragraph 6 and page 59, paragraph 3), wherein the watermarking is an authentication technique applying the matching method to prove the ownership of image document (page 59, paragraph 3). Similarly, independent claims 7 and 11 are fully taught in the combination of Schwarz and Chang. The motivation for combining the two references is to achieve accurate copy detection.

For claims 3 and 13, Hull is used to speed up the matching operation in the system of Schwarz.

For the foregoing reasons, it is believed that the rejection should be sustained.

***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-7 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-7 are drawn to a computer implemented process that merely manipulates data or an abstract idea, or merely solves a mathematical problem without a limitation to a practical application in the technological arts.

In order for a claimed invention to accomplish a practical application, it must produce a "useful, concrete and tangible result" *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02 (see MPEP 2106.II.A). A practical application can be achieved through recitation of "a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan", or "limited to a practical application within the technological arts" (MPEP 2106 IVB2(b)). Currently, claims 1-7 meet neither of these criteria. In order to for the claimed process to produce a "useful, concrete and tangible" result, recitation of one or more of the following elements is suggested:

- \* The manipulation of data that represents a physical object or activity transformed from outside the computer (MPEP 2106 IVB2(b)(i)).
- \* A recitation of a physical transformation outside the computer, for example in the form of pre or post computer processing activity (MPEP 2106 IVB2(b)(i)).
- \* A direct recitation of a practical application in the technological arts (MPEP 2106 IVB2(b)(ii)).

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4. Claims 12-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 12-15 are drawn to functional descriptive material embodied on a computer readable medium (i.e., "data structures and computer programs which impart functionally when employed as a computer component" at MPEP 2106.IV.B(1)). However, the program/algorithm itself merely manipulates data or an abstract idea, or merely solves a mathematical problem without a limitation to a practical application in the technological arts. MPEP.IV.B2(a) (statutory Product Claims) states:

"A claim limited to a... manufacture, which has a practical application in the technological arts, is statutory."

In order for a claimed invention to accomplish a practical application, it must produce a "useful, concrete and tangible result", *State Street*, 149 F.3d at 1373; 47 USPQ2d at 1601-02 (see MPEP 2106.II.A). Currently, the claims do not recite a practical application. In order for the claimed product to produce a 'useful, concrete and tangible' result, recitation of one or more of the following element is suggested:

- The manipulation of data that represents a physical object or activity transformed from outside the computer (MPEP 2106.IV.B2(b)(i)).
- A physical transformations outside the computer, for example in the form of pre or post computer processing activity (MPEP 2106.IV.B2(b)(i)).
- A direct recitation of a practical application in the technological arts (MPEP 2106.IV.B2(b)(ii)).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 4, 6, 8, 10, 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Schwarz (U.S. Patent No. 5,689,639).

Regarding claim 1, Schwarz discloses:

- receiving an image (Fig. 2: local site 14 for receiving a screen image 4);
- deriving a single hash value representative of the image such that visually distinct images result in hash values that are approximately independent of one another and images are different (see Fig. 3: each single hash value for each line image, such as Harry, Sally,....., in previous and current screen images 32 and 33), but visually similar result in identical hash values (col. 6, lines 9-11).

Regarding claim 2, Schwarz teaches storage 37 for storing the hash value in association with the screen image (Fig. 4).

Regarding claims 4, 10 and 15, Schwarz teaches comparing the hash value with another hash value derived from another image (col. 4, lines 28-32, teaches comparing the hash values between the previous image 32 and the current image 33).

Regarding claims 6, 8 and 12, Schwarz discloses:

- computing a single hash value representative of the image such that visually distinct images result in hash values that are approximately independent of one another

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and images are different (see Fig. 3: each single hash value for each line image, such as Harry, Sally,....., in previous and current screen images 32 and 33), but visually similar result in identical hash values (col. 6, lines 9-11);

- storage 37 for storing the hash value in association with the screen image (Fig. 4).

### ***Claim Rejections - 35 U.S.C. § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5, 7, 9, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwarz (U.S. Patent No. 5,689,639) in view of Chang et al. ("RIME: A Replicated Image Detector for the World-Wide Web").

Regarding claim 5, Schwarz discloses:

- receiving an image (Fig. 2: local site 14 for receiving a screen image 4);
- deriving a single hash value representative of the image such that visually distinct images result in hash values that are approximately independent of one another and images are different (see Fig. 3: each single hash value for each line image, such as Harry, Sally,....., in previous and current screen images 32 and 33), but visually similar result in identical hash values (col. 6, lines 9-11).



Schwarz does not specifically teach watermarking the digital image using, in part, the hash value to produce a watermarked image.

One skilled in the art would clearly recognize that the hashing has been used in Schwarz to speed up matching between two screen images.

Chang, in the same field of endeavor, teaches that RIME uses the hash value to produce a watermarked image (page 58, paragraph 6 and page 59, paragraph 3), wherein the watermarking is an authentication technique applying the matching method to prove the ownership of image document (page 59, paragraph 3).

Therefore, it would have been obvious to have used the hash value to produce the watermarked image applying the fast matching method in Schwarz as taught by Chang in order to achieve accurate copy detection.

Regarding claims 7 and 11, Schwarz discloses:

- computing a single hash value of the image (see Fig. 3: each single hash value for each line image, such as Harry, Sally,....., in previous and current screen images 32 and 33).

Schwarz does not specifically teach watermarking the digital image using, in part, the hash value to produce a watermarked image.

One skilled in the art would clearly recognize that the hashing has been used in Schwarz to speed up matching between two screen images.

Chang, in the same field of endeavor, teaches that RIME uses the hash value to produce a watermarked image (page 58, paragraph 6 and page 59, paragraph 3),

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wherein the watermarking is an authentication technique applying the matching method to prove the ownership of image document (page 59, paragraph 3).

Therefore, it would have been obvious to have used the hash value to produce the watermarked image applying the fast matching method in Schwarz as taught by Chang in order to achieve accurate copy detection.

Regarding claims 9 and 14, although teaching as in claims 8 and 12, Schwarz does not specifically teach watermarking the digital image using, in part, the hash value to produce a watermarked image.

One skilled in the art would clearly recognize that the hashing has been used in Schwarz to speed up matching between two screen images.

Chang, in the same field of endeavor, teaches that RIME uses the hash value to produce a watermarked image (page 58, paragraph 6 and page 59, paragraph 3), wherein the watermarking is an authentication technique applying the matching method to prove the ownership of image document (page 59, paragraph 3).

Therefore, it would have been obvious to have used the hash value to produce the watermarked image applying the fast matching method in Schwarz as taught by Chang in order to achieve accurate copy detection.

9. Claims 3 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Schwarz (U.S. Patent No. 5,689,639) in view of Hull et al. (U.S. Patent No. 5,465,353).

Regarding claims 3 and 13, although teaching as in claims 1 and 12, Schwarz does not specifically teach indexing the image using the hash value.

One skilled in the art would have clearly recognized that the system needs to speed up the matching operation.

Hull teaches, in the same field of endeavor, teaches indexing the image using the hash value, wherein the hashing has been used to speed up matching in the system (col. 3, lines 9-13).

Therefore, it would have been obvious to have indexing the image in Schwarz as taught by Hull in order to speed up the matching operation in the system.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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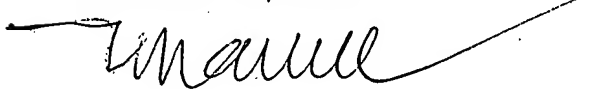
***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANH H. DO whose telephone number is 571-272-7433. The examiner can normally be reached on 5/4-9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 18, 2006



**ANH HONG DO  
PRIMARY EXAMINER**